LECTOTYPIFICATION AND A NEW COMBINATION IN *MATELEA* (APOCYNACEAE: ASCLEPIADOIDEAE) FOR AN ENDEMIC HISPANIOLAN VINE

Alexander Krings

Herbarium, Department of Botany
North Carolina State University
Raleigh, North Carolina 27695-7612, U.S.A.
Alexander_Krings@ncsu.edu

ABSTRACT

A new combination in *Matelea* is proposed. **Matelea domingensis**.

RESUMEN

Se propone una nueva combinetión in *Matelea*: **Matelea domingensis**.

Critical study of West Indian specimens of subtribe Gonolobinae (Apocynaceae: Asclepiadoideae) has resulted in the need for a new combination for an endemic Hispaniolan vine:

Matelea domingensis (Alain) Krings, comb. nov. BASIONYM: *Gonolobus domingensis* Alain, Moscosoa 3:46. 1978. TYPE: REPUBLICA DOMINICANA: trepadora de 50–60 cm de largo; flores verde amarillentas; sobre rocas, al pie de un farallón, estribo sur del Isabel de Torres, Puerto Plata, alt. 750 m, 16–17 Aug 1975, *Alain & Perfa Liogier 23780* (LECTOTYPE, here designated: JBSD!)

The critical character defining placement in *Gonolobus* Michx.—laminar dorsal anther appendages (Woodson 1941; Rosatti 1989; Stevens 2001)—is lacking, although mistakenly attributed to the species by Alain Henri Liogier (loc. cit., 1994). When pressed, the apically bilobed, staminal coronal segments (Cs sensu Liede & Kunze 1993; Kunze 1995) of the single prominent open flower of the type specimen were flattened in such a manner to perhaps superficially appear as dorsal anther appendages (Cd sensu Kunze 1995) (Fig. 1, A). However, close scrutiny, as well as study of an additional flower on the type (pressed sideways), reveals that the 'appendages' are in fact erect staminal coronal segments (Fig. 1, B; Fig. 2). Other characters that have been used to refer taxa to *Gonolobus* include winged follicles and the absence of glandular hairs (see Woodson 1941). Follicles are unknown for *Matelea domingensis*, but this character appears to be moot. Few fruit collections were apparently available to Woodson (1941) and more recent analysis has shown the character not to be useful in generic delimitation (Krings, unpubl.). Glandular hairs, although thought characteristic

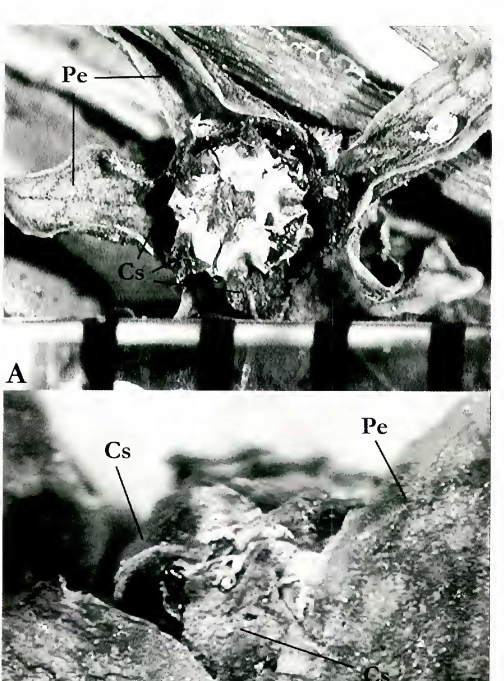

Fig. 1. Flowers of the lectotype of *Matelea domingensis* (Alain) Krings (*Alain & Perfa Liogier 23780*, JBSD): **A**, Openly pressed flower, showing reticulate petals and staminal corona segments arching over the gynostegium; **B**, sideways pressed flower, showing an apically bilobed, erect staminal coronal segment (center). **Cs** = staminal coronal segment; **Pe** = petal; **Se** = sepal. Scale in millimeters.

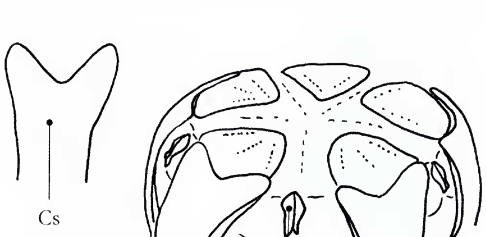

FIG. 2. Corona of *Matelea domingensis* (Alain) Krings (based on *Alain & Perfa Liogier 23780*, JBSD). **Co** = corpusculum; **Cs** = staminal coronal segment.

of *Matelea* Aubl. by Woodson (1941), are also without circumscriptional value in the *Gonolobus-Matelea* question, being present in both the type of *Gonolobus* Michx. (i.e., *G. suberosus* (L.) R. Br.) and numerous species lacking dorsal anther appendages (Rosatti 1989). From study of *Gonolobus* species in the West Indies and the southeastern United States (including the type; see Krings & Xiang 2004), it appears that characters useful for the recognition of *Gonolobus* s.s. include the combined presence of dorsal anther appendages and cordate leaf bases, although at least *G. pubescens* Griseb., *G. stellatus* Griseb., and *G. stapelioides* Desv. ex Ham. have rounded to cuneate leaf bases. A cushion-like gynostegial corona of fused staminal and interstaminal segments that is more or less prostrate, rather than erect, is also nearly ubiquitous among West Indian and southeastern United States *Gonolobus* taxa, including *G. suberosus*, *G. martinicensis* Decne., *G. stellatus*, and *G. stephanotrichus* Griseb. It appears absent in *G. jamaicensis* Rendle, although additional material is needed for further study. A reticulate corolla, as found in *M. domingensis*, does not occur in West Indian or Southeast United States taxa bearing dorsal anther appendages (these referable to *Gonolobus*). Reticulate corollas however, are common in several West Indian taxa that bear winged follicles but lack dorsal anther appendages (see Krings 2005a, b). On-going research aims to resolve the relationships among these taxa using molecular data. Recent progress has shown monophyly for the Gonolobinae (Liede-Schumann et al. 2005), however, with the inclusion

of only five *Matelea* and *Gonolobus* taxa, intra-subtribal relationships were not a focus of the study and were not resolved. The emergence of '*Matelea gonocarpa*' (type for *Gonolobus*) within a clade of other *Gonolobus* taxa supports prior treatment of the taxon in *Gonolobus* (see Rosatti 1989; Krings & Xiang 2004). Until a better resolution is achieved and rather than maintaining two internally very polymorphic genera, taxa lacking laminar, dorsal anther appendages, including *M. domingensis*, appear best treated in *Matelea*.

Some discrepancies exist between the protologue and the type specimen for *Matelea domingensis*. Two syntypes were cited in the protologue: "*Alain & Perfa Liogier 13780* (SDM, NY)"; "*A.& P. Liogier & N. Melo 23348* (SDM)." As cited, "SDM" is not an official *Index Herbariorum* acronym, rather an abbreviation for the herbarium of the Jardín Botánico Nacional Dr. Rafael M. Moscoso in Santo Domingo, Dominican Republic or JBSD. However, on the sheet at JBSD, the collection number is typed as 23780. The rest of the label information on the sheet is consistent with the protologue. A handwritten determination on the label reads: "*Gonolobus domingensis* Alain, sp. nov." The collection number "13780" is also cited by Liogier (1994), although the collector recently indicated that it should be 23780 as on the specimen label (Liogier, pers. comm.). Specimens were requested as well from NY, however, *G. domingensis* does not appear to be part of their collections. The additional syntype "*A.& P. Liogier & N. Melo 23348* (SDM)" was not included in a loan from JBSD and it remains unclear whether it is extant. Considering that no other specimens could be found, *Alain & Perfa Liogier 23780* (JBSD) is here designated lectotype for *Gonolobus domingensis* Alain.

ACKNOWLEDGMENTS

I thank the curators and staff of the following herbaria for access to their collections or loans of specimens: BH, BM, BOLO, BREM, BRIT, C, CGE, DUKE, E, F, FI, FLAS, FR, FTG, G, GA, GH, GOET, H, HAC, HAJB, HBG, IJ, JBSD, JE, K, KY, LL, M, MICH, MIN, MISS, MO, NCU, NO, NY, O, OK, OXF, P, PH, RSA, S, TENN, TEX, U, UC, UNA, US, USCH, USF, WILLI, WU, Z. I also thank the curators and staff of the following herbaria for searching their collections for West Indian Gonolobinae material, although finding no representation: BG, BKL, BR, BUF, COLO, CR, FLAS, IA, ISC, LD, MSU, NEU, NSW, UPS, TUR. The thoughtful review of a previous version of the manuscript by Alain Liogier and Mary Endress is gratefully acknowledged.

REFERENCES

Krings, A. 2005a. Notes on the *Matelea bayatensis-correllii-tigrina* complex (Apocynaceae - Asclepiadoideae - Gonolobinae) in the Greater Antilles and Bahamas. Sida 21: 1525–1533.

KRINGS, A. 2005b. A new combination in *Matelea* (Apocynaceae - Asclepiadoideae) for an endemic Jamaican vine. Sida 21:1515–1517.

KRINGS, A. and Q.-Y. XIANG. 2004. The *Gonolobus* complex (Apocynaceae - Asclepiadoideae) in the southeastern United States. *Sida* 21:103–116.

KUNZE, H. 1995. Floral morphology of some Gonolobeae (Asclepiadaceae). Bot. Jahrb. Syst. 117:211–238.

LIEDE, S. and H. KUNZE. 1993. A descriptive system for corona analysis in Asclepiadaceae and Periplocaceae. Pl. Syst. Evol. 185:275–284.

LIEDE-SCHUMANN, A. RAPINI, D.J. GOYDER, and M.W. CHASE. 2005. Phylogenetics of the New World subtribes of Asclepiadeae (Apocynaceae – Asclepiadoideae): Metastelmatinae, Oxypetalinae, and Gonolobinae. Syst. Bot. 30:184–195.

LIOGIER, A.H. 1994. La flora de la Española. VI. Familia 178.-Asclepiadaceae. Universidad Central del Este 50, ser. 27:11–49.

ROSATTI, T.J. 1989. The genera of suborder Apocynineae (Apocynaceae and Asclepiadaceae) in the southeastern United States. J. Arnold Arbor. 70:443–514.

STEVENS, W.D. 2001. Flora de Nicaragua: Asclepiadaceae. Monogr. Syst. Bot. Missouri Bot. Gard. 85:234–270.

WOODSON, R.E. 1941. The North American Asclepiadaceae. Ann. Missouri Bot. Gard. 28: 193–244.